REMARKS

In the first Office Action, claims 1-44 were presented for examination. Of these, claims independent claim 1 and its dependent claims 2 and 22 and independent claim 31 and its dependent claims 32 and 35 were rejected as being anticipated by Crookston. Dependent claims 3-12, 17-21, 23-30, 33-34, 37-38, and 40-44 were rejected as being obvious with Crookston as the primary reference.

The remaining dependent claims 13-16 and 39 were rejected under 35 USC 102 as being anticipated by Van Wagoner but their independent claims 1 and 31 were not rejected as being anticipated by Van Wagoner.

With this amendment, independent claims 1 and 31 have been amended as have their respective dependent claims 19, 20, 27, 29, 34, 42, and 44. Dependent claims 17, 18, 33, and 41 have been cancelled.

Amended Independent Claim 1 And Its Dependent Claims 2-16 And 19-30

Original independent claim 1 was rejected as being anticipated by Crookston. This rejection is respectfully traversed as it might apply to independent claim 1 as currently amended herein.

From the outset, it is respectfully pointed out that the claimed invention of the present application is to a flooring structure not a roof as in Crookston. The requirements of floors versus roofs are sufficiently different that Applicant respectfully submits a person of ordinary skill in the flooring art would not necessarily be skilled in roofs and more importantly would not look to roofs for teachings. Roofs such as Crookston are respectfully submitted as being non-analogous art.

Crookston in particular is a roof structure with a layer of polystyrene beads. Polystyrene beads are specifically called out by Applicant in the present application as not being included in

the original wording of claim 1 calling for beads of "elastic, resilient" material. As disclosed and discussed by Applicant at lines 15-22 of page 6 of his specification:

> The acoustic layer 5 includes a plurality of discrete beads 9 of substantially **elastic, resilient material (e.g., polyethylene, polypropylene)** that can be deformed wherein the beads will rebound to their original shapes of Figure 1. **This is in contrast to materials such as polystyrene that are essentially incompressible in normal use and crush under excessive loads.** (emphasis added)

Appropriately and in contrast, Crookston uses polystyrene beads at 14 for their incompressibility or rigidity in normal use and positions them above his equally rigid polystyrene slab 12 and below his top layer 16. The top layer 16 in this regard is described at lines 32-33 of his column 3 as being made of "harder and denser [material]" than his underlying polystyrene layers 12 and 14. In this arrangement, the rigid polystyrene layers 12 and 14 thus maintain the desirable, overall rigidity of his roof structure as first established by his upper layer 16. Crookston specifically describes his polystyrene layer 12 as being "rigid, light in weight and yet strong" and a "rigid foamed plastic material" in lines 39-40 and 47 of his column 2. Crookston makes no qualifications as to the polystyrene of layer 14 and presumably it is the same as the polystyrene of layer 12, otherwise the overall rigidity of the roof would be compromised. In the background discussion of his invention, Crookston relates at lines 38-40 of his column 1 that his roof compares to ones of "glass beads, insulating concrete or bituminous blocks," all materials used for their rigidity.

In the use of Crookston for roofs, the rigidity of polystyrene is thus desirable. As set forth in the attached internet printout of a general discussion by "e Residential Energy Systems":

> Both types [molded and extruded] of polystyrene insulation have the advantages of high R-value, good moisture resistance, [and] high structural strength

compared to other rigid insulation materials. (emphasis added)

As to the crushable quality of polystyrene, it is actually an attribute when used in some fields such as safety helmets and packaging. Polystyrene in such applications is specifically called out and used because of its crushable quality. In the attached article by the Bicycle Helmet Safety Institute entitled "Foams Used In Bicycle Helmets" at lines 19-25 of page 3 and lines 11-19 of page 4, this crushable characteristic of polystyrene is described as:

Crushable Foams

> Crushable foams are ideal for helmets designed for one hard impact. ... When [such] foam crushes, it does not bounce back at the bottom like a spring to make the impact worse. (emphasis added)

Some Crushable Foams:

> EPS Expanded PolyStyrene is one of the most widespread foams used in our society. It is the white picnic cooler foam that you see eggs and stereo gear packed in. ... It is the white food carton or drink cup you get at a carry-out. It is cheap to manufacture, light, and has almost ideal crush characteristics with no bounce-back to make the impact more severe. (emphasis added)

In the packaging industry, Lookholder in his US Patent No. 4,193,499 discusses this distinction between rigid and flexible, resilent packaging materials. Lookholder specifically points out that the crushable nature of polystyrene makes it more desirable in the packaging industry for protecting contents during impact than flexible, resilient ones like polyethylene. As recited by Lookholder at lines 25 of his column 1 and carrying over to lines 3 of his column 2:

> Polystyrene containers are molded to form-fit the merchandise. They have the advantage of securing the contents snugly within an outer package and of being crushable in [the] event of impact, whereby the energy of the impact is permanently absorbed [by the crushing polystyrene] and the contents thus protected. ... [In contrast], foam [like polyethylene] remains truly

> flexible and resilient, it of course acts as a spring to store impact energy and later release it, rather than permanently absorbing the energy [as with the crushed polystyrene]. Therefore, the protective effect [of elastic, resilient foams like polyethylene] is limited to cushioning, that is, softening and distributing, impact - rather than permanently absorbing the impact [like polystyrene]. (emphasis added)

and from page 51 of the attached ECS Composites, Inc. Textbook:

> **EXPANDED POLYSTYRENE FOAMS (EPS)**
>
> EPS foams are extensively used for commercial, non-reusable packaging applications ... As non-reusable cushioning materials, EPS foams are nearly perfect because of their low density, low cost, and adequate cushioning properties. However, these foam materials do crush and permanently distort as a result of compression. As a result, they do not demonstrate long term, repeatable shock absorption properties ....
> (emphasis added)

In the above light and consistent with Applicant's original disclosure, particularly at lines 15-22 of page 6 as quoted above, Applicant has amended his independent claim 1 to specifically recite that the resilient, elastic beads are selected from the group consisting of polyethylene and polypropylene.

In specific reference to the dependent claims rejected on obviousness based on Crookston as the primary reference and regardless of the combinations proposed by the Examiner, the modified roof of Crookston would still be a roof, not a flooring structure. Further, to the extent any such modified roof of Crookston has a non-rigid, substitute material for his polystyrene layer 14, it would compromise the integrity of the desired rigidity of his teaching.

Reconsideration and allowance of amended independent claim 1 and its dependent claims 2-16 and 19-30 are respectfully requested.

Amended Independent Claim 31
And Its Dependent Claims 32, 34-40, And 42-44

Original independent claim 31 was also rejected as being anticipated by Crookston. This rejection is respectfully traversed as it might apply to independent claim 31 as currently amended herein for essentially the same reasons as set forth above as to amended independent claim 1.

Reconsideration and allowance of amended independent claim 31 and its dependent claims 32, 34-40, and 42-44 are respectfully requested.

Dependent Claims 13-16 and 39

These dependent claims were also rejected under 35 USC 102 as being anticipated by Van Wagoner; however, their independent claims 1 and 31 were not. To the extent the Examiner meant to include their independent claims 1 and 31, this rejection is respectfully traversed as it might apply to claims 1 and 31 as amended herein. For essentially the same reasons as expressed in regard to Crookston above, Applicant believes Van Wagoner is not a proper teaching. Applicant respectfully submits Van Wagoner as well as Crookston are non-analogous art to the claimed flooring structure of the present invention. As for example and among other things, the Examiner characterizes Van Wagoner and Crookston as having an "acoustic" layer, but no such characterization is made by either and neither seems in any way concerned about it. Van Wagoner even calls out in his background discussion at 18-19 of his column 1 that his invention is in the field of "insulating the interior of a building from ambient thermal cycling." At the bottom of his column 1 and carrying over to the top of his column 2, he then discusses ambient temperature ranges of -30 degrees to 180 degrees and then speaks of the need to provide "thermal protection" in such roofing at line 6 of his column 2.

In additional to Van Wagoner being non-analogous art, his need to use polystyrene for its strength and rigidity is apparent

for his roofing as he discloses at lines 50-55 of his column 2 that:

> ... a substantial amount of gravel needs to be applied directly [over the roofing on the order of] 1,000 pounds or more per 100 square feet. The roof deck must therefor be designed to support a considerable amount of weight.

SUMMARY

It is respectfully submitted that all of the claims now present in the case (claims 1-16, 19-32, 34-40, and 42-44) are in condition for allowance and such action is respectfully requested. If, in the opinion of the Examiner, prosecution of this application could be expedited by a telephone interview, the Examiner is respectfully requested to contact the attorney for the applicants at the telephone number listed below.

A petition under Rule 1.136(a) accompanies this amendment.

Respectfully submitted,

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